

## Law Enforcement in Community Forestry: Consequences for the Poor

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**Abstract** Decentralised forest management is believed to hold potential for increased economic and social equity. Implications of the associated local forest law enforcement on livelihoods, however, are not well understood. This paper explores the impacts of local forest law enforcement with a focus on the poorest forest users in community-managed forests. A case study including 14 community forest groups in western Nepal was conducted in 2008. Methods included review of archival data, a stakeholder survey ( $n = 211$ ), and recall of forest crimes by a random household sample ( $n = 252$ ). Local forest law enforcement was found to detect far more crimes than district-level enforcement. Crimes are primarily small-scale unauthorised appropriation of products for subsistence use by poorer households and rules are lightly enforced. It is argued that local law enforcement, while apparently not economically harmful to the poorer in the short term, may be used to perpetuate existing wealth and cast-based social inequities.

**Keywords** Collective action · Decentralised forest management · Equity · Forest crime · Nepal · Himalaya · Participatory forest management

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## Introduction

There is substantial international focus on strengthening forest law enforcement to halt illegal logging (World Bank 2006) and thus curb deforestation, protect biodiversity and reduce carbon emissions (Brook et al. 2003; Bala et al. 2007). Forest incomes, both cash and subsistence, are vital to the livelihoods of approximately one billion poor people (World Bank 2006), but the consequences of present forest law enforcement initiatives (such as the Forest Law Enforcement and Governance (FLEG) processes) for rural livelihoods have not received much attention (Colchester 2006). Nor has the nature and scale of illegal forest activities involving non-timber forest products been subject to much scrutiny. While illegal logging may affect poor forest users negatively through destruction of forest resources (Auer et al. 2006), strict forest law enforcement may impact negatively on rural livelihoods through criminalisation of small-scale cash and subsistence forestry activities providing vital local incomes (Colchester 2006; Kaimowitz 2007). In Nepal, illegal collection of both cash and subsistence products from national forests is reportedly widespread and often subject to rent-seeking by forest authority personnel (Larsen et al. 2000; Malla 2001; Gautam 2006). However, rent-seeking levels appear to be low (Olsen and Helles 2009).

While the emphasis on strict forest law enforcement is arguably largely forest-centred, a more people-centred measure towards improved forest management, forest decentralisation—defined by Ribot (2004) as the formal transfer of powers to actors or institutions at lower levels in political, administrative or territorial hierarchies—has been increasingly popular since the late 1970s (Hobley 1996). Decentralised forest management is now said to be applied in more than 10% of forests globally (Sunderlin et al. 2008). Based on the benefits of collective action (as outlined by Ostrom 1990), forest decentralisation is assumed to promote ecological sustainability and social equity to a larger degree than centralised forest management through locality-specific ecological knowledge held by users-cum-managers and downward accountability of local leaders responsible for forest management and benefit distribution (Agrawal 2001; Gupte 2004; Andersson and Gibson 2006).

Evidence of ecologically sustainable decentralised forest management is emerging (Ostrom and Nagendra 2006) and this sustainability is documented to be positively associated with active local forest law enforcement, i.e. monitoring and sanctioning (Gibson et al. 2005; Pagdee et al. 2006; Chhatre and Agrawal 2008). Socially equitable decentralised forest management is rarely documented (but see Pagdee et al. 2006); inequities are reported globally in relation to decision-making, benefit-distribution and labour contributions (Ahmed and Laarman 2000; Pacheco 2005; Blessing et al. 2006; Iversen et al. 2006; Shrestha and McManus 2007; Dasgupta and Beard 2007; Bandiaky 2008). It remains unknown, however, to what degree locally assigned rules on forest product extraction contribute to inequity in decentralised forest management.

Nepal has a long history and wide coverage of decentralised forest management with involvement of local forest users in, among other, monitoring of forest product extraction. This paper reports on a case study of the household-level equity impact

of local forest law enforcement in Nepalese community forest user groups (CFUGs). The study is based on empirical data on locally reported forest crimes, perceptions of forest crimes, and rule enforcement in 14 remote CFUGs. Specifically, the study: (1) documents officially recorded forest crimes, (2) explores perceptions of the nature, severity and causes of forest crimes in community forests held by main stakeholders at local and central levels, and (3) investigates current forest crimes and penalties in 14 case CFUGs. Issues related to ecological sustainability and the state of the community forest resources are not addressed. The next section presents background information on community forestry in Nepal and the nature of forest crime before introducing the study sites, the methods applied and the results of the study.

## Community Forestry in Nepal

Starting in the late 1970s, decentralized forest management now covers 25% of the Nepalese forest area (1.1 M ha) and includes 35% of all Nepalese households (1.5 M households) in about 14,000 CFUGs (Blaikie and Springate-Baginski 2007). Forest areas are handed over to users organised in a CFUG by the District Forest Officer according to rules specified in the *Forest Act* 1993 (HMG 1993) and *Forest Regulation* 1995 (HMG 1995). The implementing body of the CFUG is the Users' Committee elected at the annual General Assembly. The program is considered a success in terms of both forest conservation and socio-economic contribution (Kanel and Dahal 2008; Tachibana and Adhikari 2009), although concerns with elite capture and marginalisation of poor and low caste forest users are voiced (Gilmour 2003).<sup>1</sup>

In 1957 all forests in Nepal were nationalised and the first *Forest Act* in 1961 formally restricted local access to any product in the national forests. This did not halt or decrease forest degradation and deforestation, and the Government of Nepal began to pursue actively participatory forest management to conserve forests and to provide basic forest products to the large number of forest-dependent households (HMG 1976, 1989). Today the legal basis for community based forest management in Nepal is a binding agreement between each CFUG and the Nepalese government specified in an approved work plan valid for 5 years (HMG 1993, rule 25) and a constitution (HMG 1993, rule 42; HMG 1995, rule 27). The work plan includes a forest map, specifies forest management objectives and activities, and describes methods of forest protection (i.e. prohibited or restricted activities) (HMG 1995, rule 28). The constitution includes specification of the working procedures of the Users' Committee (the executive body of the CFUG), methods for operating funds and auditing the accounts, methods for controlling forest crimes (i.e. monitoring), and punishments for operations contrary to the work plan (HMG 1993, Appendix 11). The *Forest Act* specifically states that only forest products mentioned in the

<sup>1</sup> The Nepalese society is predominantly Hindu. The Hindu caste system, according to which occupational caste members (e.g. tailors, cobblers, blacksmiths) are considered inherently inferior, is deeply entrenched in daily life, including in community forestry management (Nightingale 2002).

work plan may be extracted and entitles the CFUG to ‘impose an appropriate punishment’ for contravening the work plan (HMG 1993, rule 29). The Nepalese Community Forestry Programme thus enables CFUGs to assign rules for forest protection as well as associated fines.

Generally, preparation of the constitution and work plan is led by forest officers and local (formal or informal) leaders who are often wealthy and high caste male individuals (Malla et al. 2003; Paudel et al. 2008). More or less the same forest management activities, rules and benefit-sharing arrangements are typically specified for several CFUGs in an area, indicating a strong influence from professional foresters at least in new community forests. Typical community forestry work plans specify amounts of timber and green firewood to be extracted and restrictions on extraction by time period or area designation of several other products, such as dry firewood, forest grazing, non-timber forest products, grasses and forest litter. This practice is found to favour especially CFUG members possessing private tree resources (Iversen et al. 2006).

### Forest Crimes in Community Forestry

As defined by Downes and Rock (1995), forest crimes are activities and behaviour that are banned or outside the framework (control) established by relevant authorities. Forest crimes in Nepalese community forests are thus defined by the *Forest Act* and the CFUG work plan and are offenses against property rather than persons. Therefore, crimes are expected to follow the neoclassical rational choice theory (Becker 1968) and CFUG members who break the law are assumed to do so only if they perceive the probability and costs of apprehension to be smaller than the benefits derived from the illegal forest products extracted. Examples of illegal activities are firewood collection outside the season designated in the work plan and unlicensed timber cutting.

Labelling of activities as crimes, however, is often the privilege of politically and economically high-ranking groups in a society (Chambliss and Seidmann 1971); CFUG rules are typically crafted by the Users’ Committee where not all members may be able to exert influence (Iversen et al. 2006). Therefore, the understanding of forest crime within Nepalese community forestry draws upon radical criminology (Lynch and Michalowski 2006) that argues that prevalent rules are defined by the ruling classes. Furthermore, perceptions of crime are not static and may depend on the social reaction to the criminal act (Schur 1971), and whether a particular act is considered a crime may depend on who undertakes it (Becker 1978). The approach applied here is to investigate forest crimes as conscious undertakings by rational individuals (rather than deviants), who are subject to rules possibly crafted by those in the CFUG empowered by the current social conditions of Nepal, i.e. the wealthy and politically well organised from so-called high castes. Throughout the present paper the term *forest crime* is used to denote that an officially sanctioned rule has been broken and the individuals breaking the rule are termed *forest criminals*; no normative connotations are implied by the use of these terms.

## The Study Area

The study was carried out in Simjung and Gyachchok Village Development Committees (VDCs, lowest administrative unit with elected leadership; the term here refers to the geographical area concerned) of Gorkha District, located about one day's walk from the nearest road and therefore similar to relatively large parts of the Middle Hills of Nepal. The population depends on small-scale farming, labour wages, army pensions and remittances. All households use forest products for cooking, heating, house construction, animal fodder and organic fertilizer, agricultural implements and to some degree medicine.

The Community Forestry program was initiated in Gorkha District in 1990; half of the total forest area (50,919 ha) was classified as potential community forest. By 2008, about 18,765 ha had been handed over to 404 CFUGs involving 47,691 households, about 80% of the District's population (DFO 2008). In Simjung most of the forest is managed by CFUGs while in Gyachchok most forests are under (de jure) national control. All 14 CFUGs established in Simjung and Gyachchok VDCs have been included in this study, Table 1 provides details on size of forest area, year of establishment and demography for the CFUGs. Several forests in Gyachchok were in the process of being handed over to local forest users at the time of the study. The two VDCs are located at elevations from 700 to 3,000 masl and thus span a large variation in agricultural potential and forest types. Major forest species found in the area are

**Table 1** Characteristics of community forest user groups in Simjung and Gyachchok village development committees (VDCs), Gorkha District, 2008

Name of Community Forest	VDC	Handover date	Forest area (ha)	Number of households	Population	Monitoring mechanism <sup>a</sup>
Amale Mandir	Simjung	1999	12.64	120	672	1
Aru Bote	Simjung	2000	7.32	88	437	2
Braikot	Gyachchok	2002	97.75	27	144	1
Darbote Kathedanda	Simjung	1992	12.25	84	529	2
Dhoke Dhunga Darbare	Simjung	2004	37.44	259	1494	1
Didi Bahini	Simjung	1994	3.25	120	600	3
Dobhan Pakha	Simjung	2000	38.5	149	725	1
Himali Lali Gurans	Simjung	2004	53.5	148	940	3
Jhakre Pakha	Simjung	1992	10.08	149	728	3
Mausuli Pakha	Simjung	1996	45.44	52	294	1
Nimare Pakha Mahila	Simjung	1999	4.4	57	280	1
Pokharatar Paharepani	Simjung	1995	35.72	73	365	1
Saune Chiuribote	Simjung	1995	36	258	1491	1
Shri KamDhenu Mai	Gyachchok	2002	19.25	35	249	1
Total/average			413.54/ 29.54	1619/116	8948/639	–

<sup>a</sup> 1 Paid watcher, 2 Member households on rotational basis, 3 No monitoring

*Castanopsis indica*, *Schima wallichii* and *Shorea robusta*. Major crops grown are rice, millet, maize, wheat and potatoes; irrigation systems are available in the lower-lying areas. Livestock rearing includes cattle, buffalos, goats and sheep. Simjung, being the least remote of the two VDCs, has provision of electricity in lower lying areas and a secondary school. Literacy rates are 49 and 41%, respectively. Facilities in both VDCs include a post office, a health post with trained staff and community-based saving-groups.

## Research Method

To increase understanding of the equity impact of local forest law enforcement three types of data were gathered: (1) official historical data on forest crimes, (2) perceptions of main stakeholders regarding types, frequencies and motives of forest crimes and influence on forest rules, and (3) types and frequencies of forest crimes committed by CFUG members in Simjung and Gyachchok between 2003 and 2008. Data were collected in late 2008.

Details of forest crimes recorded in the judiciary system were available from 1987 onwards. The required permits for access to the legal documents were obtained and officers at Gorkha District Court and District Forest Office were of great assistance in locating the requested records. All forest crimes recorded were identified through review of the files. Details of filed cases recorded were the nature of the crime, the value of products extracted, fine levied, and duration of the prosecution. Additional information on individual cases, for example whether a given fine accurately reflected the value of an illegally harvested product, was collected through key informant interview primarily with forest officers. As discussed by Graham (2003) and Gavin et al. (2010), this method captures only crimes that were discovered by authorities and what forest rangers and officers have chosen to report, without any information on patrolling rates at various times; the method therefore does not identify the full picture of forest crimes at the time. It is evident from the records that minor crimes, such as firewood theft, were not recorded but it is not clear whether other systematic biases occur.

Inspired by Larsen et al. (2005), perceptions of current forest crimes (their nature, characteristics of criminals, motives of crimes, penalties applied) were elicited in a survey of representatives of the main stakeholder groups involved in community forestry, these being:

(1) forest users, (2) CFUG committee members, (3) advocacy groups engaged in community forestry, (4) forest authorities working at district and central levels, and (5) national and international academics carrying out research on community forestry. The respondents selected included:

1. 29 heads of households randomly selected to cover all 14 CFUGs in Simjung and Gyachchok VDCs;
2. one representative from each of the 14 Users' Committees in Simjung and Gyachchok VDCs with additional representatives from 38 randomly selected CFUGs in Gorkha District (52 in total, the respondent was the chairman, secretary or treasurer of the CFUG);

3. 26 executive members from advocacy groups, using judgemental sampling, criteria for inclusion being familiarity with community forestry from working experience in the field and a reputation for being well-informed on community forestry. Respondents belonged to two groups—the Federation of Community Forest User Groups (FECOFUN) and the Himalayan Grassroots Women's Natural Resources Management Association (HIMAWANTI);
4. 51 representatives of government, of which 30 were from the district (Assistant Forest Officers and District Forest Officers from the western development region were included) and the rest from the national forest authorities (officers from the Department of Forest, the Department of Forest Research and Survey, and the Ministry of Forests and Soil Conservation), were selected based by judgemental sampling; and
5. 53 national and international academics whose research work was related to community forestry were selected from Tribhuvan University in Nepal, other research institutions, and non-governmental organisations working in Nepal. A structured questionnaire was developed, answer categories were developed with key informants and the questionnaire was tested in a rural setting similar to the study area prior to the survey. All 211 individuals contacted responded to the survey in face-to-face interviews.

The nature and number of forest crimes in Simjung and Gyachchok CFUGs between 2003 and 2008 were assessed through a separate recall-based structured questionnaire administered to a total of 252 randomly selected CFUG member households. Respondents were asked, in face-to-face interviews, to recall forest crimes they had committed, fines received, and the estimated value of the product appropriated. These questions were added to the fourth and final quarterly survey round of a total annual household income study eliciting recall-based information on all incomes and inputs to household production by sector, following the approach developed by the Poverty Environment Network (PEN 2007). Collection of annual income data involved repeated visits to the study area and frequent interaction with citizens and community authorities in 2008. Respondents were grouped into three wealth categories based on annual net incomes reported (Chhetri et al. 2010). Disclosure of crimes committed is a highly sensitive issue and questions risk invoking suspicion and strategic responses (Downes and Rock 1995). Strategic responses are believed to have been partly countered by the substantial degree of trust built with the respondents during frequent interactions over the 9 month period prior to administering the questionnaire. It is likely, however, that the number of crimes and possibly their severity have been underestimated.

## Results

### Forest Crimes Recorded in Gorkha District

Forest crimes recorded by Gorkha District Forest Office were related to appropriation of forest products for commercial purposes or clearing of forest

land. A total of 27 cases of forest crimes were recorded by the District Forest Office and the District Court in the period 1987–2008, details of which are reported in Table 2. Twenty-two cases were registered between 1989 and 1997 while five cases were registered after 1997. All crimes were related to national forests—no crimes in community forests were registered—and all cases were settled in the district.

Cases with an estimated product value of more than 10,000 Rs are registered at the District Forest Office and then transferred to the District Court (where the average duration of processing a case was 11 years). The value when the final decision was made was lower than that when the crime was first reported and the imposed additional penalty was up to twice the value of the illegally harvested product.

### Perceived Characteristics of Community Forestry Crimes

Stakeholders were asked which forest crime they thought occurred most frequently. Table 3 presents the frequencies and relative frequencies of answers by stakeholder group. For all groups the most common answer was illegal collection of firewood, followed by illegal cutting of timber and poles.

When asked about the motives behind forest crimes, general agreement was found across stakeholder groups that forest crimes are related to poverty (Table 4). Respondents answered that people with little land have few private trees and as the same people typically lack the means to purchase firewood or timber, illegal procurement is their only option. The failure of current rules to recognize previous traditional rights was held to further exacerbate the plight of the poor. Interestingly, more academics than other types of stakeholders believed that inequitable rules could drive forest crimes, and all but forest users thought that limited knowledge

**Table 2** Types of crimes and fines imposed in registered forest crimes, the Gorkha District Forest Office (DFO) and District Court, 1987–2008 ( $n = 27$ )

Type of forest crime	Number of final decisions by		No. of persons involved	Penalty imposed (Rs) <sup>a,b</sup>		Total penalty (Rs)
	DFO	Court		Value of product      Fine		
				Mean ± SD	Mean ± SD	Mean ± SD
Timber transfer	6	3	19	10,361 ± 7,889	10,630 ± 636	20,991 ± 7,253
Timber extraction	10	1	21	5,848 ± 6,510	4,677 ± 7,125	10,525 ± 13,391
Timber and other forest product extraction	5	–	20	5,557 ± 10,187	11,475 ± 11,263	17,032 ± 21,437
Encroachment <sup>c</sup>	2	–	5	5,579 ± 4,176	11,607 ± 10,628	17,186 ± 13,948
All cases	23	4	65	7,135 ± 7,382	8,569 ± 9,161	15,704 ± 15,772

<sup>a</sup> One USD equals approximately 69 Nepalese Rupees (Rs) in the study period (2008)

<sup>b</sup> Values are converted into 2008 price level using the Consumer Price Index (CPI) for the Hills of Nepal

<sup>c</sup> Encroachment refers to clearing of forest land for agriculture



**Table 3** Frequency and relative frequency (%) of stakeholders, by group, mentioning a specific forest crime to be the most frequently occurring in community forests generally, Nepal, 2008

Most frequent forest crime	Stakeholder group					
	Forest users <i>n</i> = 29	Committee members <i>n</i> = 52	Advocacy groups <i>n</i> = 26	Forest authorities <i>n</i> = 51	Academics <i>n</i> = 53	All respondents <i>n</i> = 211
Firewood collection	15 (52)	29 (56)	11 (42)	26 (51)	31 (59)	112 (53)
Timber harvest	–	5 (10)	5 (19)	7 (14)	4 (8)	21 (10)
Pole harvest	11 (38)	6 (12)	1 (4)	–	–	18 (9)
Grazing in the forest	–	5 (10)	3 (11)	4 (9)	5 (9)	17 (8)
Thatch grass collection	1 (3)	5 (10)	1 (4)	3 (6)	3 (6)	13 (6)
Misuse of forest fund	2 (7)	–	–	7 (14)	3 (6)	12 (6)
Encroachment on forest land	–	–	2 (8)	1 (2)	3 (6)	6 (3)
NTFP trade or smuggling	–	–	1 (4)	1 (2)	1 (2)	3 (1)
Lighting of a forest fire	–	1 (2)	2 (8)	–	–	3 (1)
Quarrying or mining	–	–	–	1 (2)	1 (2)	2 (1)
Failure to pay fee	–	1 (2)	–	–	1 (2)	2 (1)
Poaching	–	–	–	1 (2)	1 (2)	2 (1)

concerning rules could explain illicit action. No respondents suggested that forest crimes were committed for personal gain.

When asked who typically committed what type of forest crime, a clear pattern emerged. The poor were perceived to steal low value products such as firewood and thatch grass and to not pay the relatively small fees set by the CFUG, while the rich were thought to engage in illegal logging of valuable timber and encroachment on the forest (Table 5). There was also a tendency to blame outsiders for poaching and quarrying, activities that are considered serious and unusual.

The level of law enforcement in community forests generally was perceived to be low (Table 6). Respondents in all stakeholder groups agreed that most often, when caught, a criminal receives only a warning and frequently nothing happens at all. Fines and seizure of products were mentioned less frequently; no other penalties were mentioned. This situation was lamented by some, while others were of the opinion that because forest crimes are rarely committed for personal gain a lenient practice is appropriate.

There was agreement across all groups that the poor have less influence on the community forestry rules than wealthier households. The current rules were not generally perceived to prevent forest crimes (Yes: 36%, No: 55%, Don't know: 9%), only respondents in the forest authorities group expressing some belief in the working of rules (Yes: 55%, No: 45%). No clear picture of the perceived relation between forest crimes and the state of the forest in general emerged; frequencies of answers to the question of whether the forest condition in general is perceived to be deteriorating as a consequence of forest crimes were: Yes: 40%, No: 49% and Don't know: 11%.

**Table 4** Frequency and relative frequency (%) of stakeholders, by group, mentioning the main motive behind forest crimes in community forests generally, Nepal, 2008

Motive	Stakeholder group					
	Forest users <i>n</i> = 29	Committee members <i>n</i> = 52	Advocacy groups <i>n</i> = 26	Forest authorities <i>n</i> = 51	Academics <i>n</i> = 53	All respondents <i>n</i> = 211
Limited resource in their private land	18 (62)	28 (54)	13 (50)	15 (29)	14 (26)	88 (42)
Traditional rights not recognized	4 (14)	4 (8)	1 (4)	17 (33)	20 (38)	46 (22)
Limited knowledge about the rules	1 (3)	14 (27)	5 (19)	9 (18)	8 (15)	37 (18)
Inequitable rules	1 (3)	2 (4)	2 (8)	3 (6)	10 (19)	18 (9)
High fees	2 (7)	–	1 (4)	2 (4)	–	5 (2)
Other	3 (10)	4 (8)	4 (15)	5 (10)	1 (2)	17 (8)

**Table 5** Stakeholder perceptions of types of forest criminals and crime patterns, Nepal, 2008

Forest crime	Stakeholder group					
	Forest users <i>N</i> = 29	Committee members <i>n</i> = 52	Advocacy groups <i>n</i> = 26	Forest authorities <i>n</i> = 51	Academics <i>n</i> = 53	All respondents <i>n</i> = 211
Illegal collection of firewood	P	P	P	P	P	P
Illegal collection of thatching grass	P	P	P	P	P	P
Do not pay the fee	P	P	P	P	P	P
Illegal grazing	M	P	M	M	M	M
Illegal collection of poles	P	M	P	M	P	M
Encroachment	R	O	R	P	R	R
Illegal collection of timber	R	R	P	R	R	R
Illegal quarrying/mining	P	O	P	R	R	R
Poaching	O	O	R	O	R	R
Misuse of forest fund	C	C	C	C	C	C
Forest fire	R	O	M	–	R	O
Illegal NTFP trade/smuggling	–	O	R	P	P	O

Answer options provided: *P* Poor, *M* Middle class, *R* Rich, *O* Outsiders, *C* Committee members

Only the most common answer is provided for a stakeholder group; the answer provided in all cases was supplied by more than 50% of the respondents in a group

### Forest Rules and Crimes in Simjung and Gyachchok VDCs

A review of forest work plans showed rules to be somewhat similar for the 14 CFUGs in Simjung and Gyachchok VDCs (Table 7). Collection of forest litter and

**Table 6** Frequencies and relative frequency (%) of stakeholders mentioning most typical consequences of crimes in community forests generally, Nepal, 2008

Consequence type	Stakeholder groups					
	Forest users <i>n</i> = 29	Committee members <i>n</i> = 52	Advocacy groups <i>N</i> = 26	Forest authorities <i>n</i> = 51	Academics <i>n</i> = 53	All respondents <i>n</i> = 211
Warning	16 (56)	39 (75)	18 (69)	27 (53)	24 (45)	124 (59)
Nothing	5 (17)	6 (12)	3 (12)	8 (16)	10 (19)	32 (15)
Fine	7 (24)	2 (4)	3 (12)	9 (18)	2 (4)	23 (11)
Seizure of collected products	1 (3)	4 (8)	2 (8)	6 (12)	10 (19)	23 (11)
Fine and seizure of collected products	–	1 (2)	–	1 (2)	7 (13)	9 (4)

twigs is unrestricted; varying degrees of restrictions apply to other forest products. Fines vary by forest crime and become more severe upon repetition.

Seventy-six household heads out of 252 reported that someone from their household had been discovered when committing a forest crime at least once between 2003 and 2008. Seventeen (22%) of these perpetrators had been fined (Table 8). These data are in line with CFUG records. The frequency of forest crimes appears negatively correlated with income: households categorized as poor committed twice as many crimes as households falling in the medium wealth category and four times as many as the rich. Poor households had a higher proportion of crimes related to firewood collection and rich households reported relatively more crimes related to illegal timber harvest. According to key informants the rules specified in Table 7 were not strictly applied in practice and the fines levied were almost always lower than those specified in the CFUG constitutions. The assigned fines were also lower than the estimated values of the illegally extracted products; for example, the total value of fines for illegally harvested products made up 11% of the total product value of these products.

## Discussion

Forest law enforcement in Nepal has changed dramatically with the implementation of the community forestry program. As management of an increasing forest area becomes the responsibility of forest users rather than authorities, control mechanisms and incentives for rule observance change fundamentally. The findings reported from this study in two purposively selected VDCs may be useful in guiding analyses of observations in CFUGs in similar conditions.

### Effects of Local Forest Law Enforcement

This case study found that only forest crimes involving marketable products in national forests end up in the formal judicial system whereas the majority of forest

**Table 7** Rules regulating forest product harvesting in work plans of 14 CFUGs in Simjung and Gyachok Village Development Committees, Gorkha District, 2008

Name of community forest	Green firewood	Small timber	Large timber	Grazing	Dry firewood	Fodder grass	Ground grass	Thatching grass	Litter	Twigs	Other NTFPs	Charcoal	Poaching	Quarrying/mining
Jhakre Pakha	c	b	d	d	c	a	a	a	a	a	–	–	e	E
Mausuli Pakha	c	b	d	e	a	d	–	–	–	a	–	d	e	E
Nimare Pakha	c	b	d	e	b	a	a	a	a	b	–	d	e	E
Dobhan Pakha	c	c	c	e	a	a	a	–	a	a	d	d	e	e
Amale Mandir	c	c	d	a	a	a	a	a	a	a	e	d	e	e
Darbote Kathedanda	c	c	d	e	b	a	b	c	a	a	–	d	e	e
Dhoke Dhunga	c	d	d	a	a	a	a	–	a	a	e	d	e	e
Didi Bahini	c	d	d	a	b	a	b	b	a	a	e	d	e	e
Himali Lali Gurans	c	d	d	a	d	a	a	a	a	a	e	e	e	e
Pokharatar	c	d	d	a	b	b	a	b	a	a	e	e	e	e
Saune Chiuribote	c	d	d	a	b	a	a	a	a	a	e	d	e	e
Braikot	c	d	d	e	b	a	a	a	a	a	e	d	e	e
Aru Bote	d	d	e	a	a	a	a	c	a	a	e	d	e	e
Shri KamDhenu	e	d	e	e	a	e	a	a	a	a	e	e	e	e

Answer options provided: *a* open access in specified areas, *b* access opened frequently as per the need of the community, *c* access opened once or twice a year, *d* restricted access, permits for limited amounts can be given to a household, *e* full ban, – not mentioned

**Table 8** Frequencies of forest crimes ( $n = 76$ ) for which a household member was discovered and penalties levied, by wealth group, in community forests of Simjung and Gyachechok VDCs, Gorkha District, 2003–2008 ( $n = 252$ )

Wealth class	Types of penalty <sup>a</sup>	Illegally harvested/collected product						Total no. of crimes	Total fine paid (Rs)	Estimated value of illegal product <sup>b</sup> (Rs)
		Fuelwood	Timber/pole	Fodder grass	Thatching grass	Quarrying	Agricultural implements			
Poor ( $n = 84$ )	Nothing	17	1	2	1		2	23		15,040
	Warning	6	7					13		7,250
	Seizure of products									
	Fine (Rs. in total)	2 (120)	4 (970)				3 (1,100)	10	2,390	4,290
Sub-total		25	12	2	1		5	46	2,390	26,580
Middle income ( $n = 84$ )	Nothing	6	1	1	1		1	10		7,140
	Warning	2	2	1			1	6		2,015
	Seizure of products		1					1		600
	Fine (Rs. in total)		2 (600)					2	600	650
Sub total		8	6	2	1		2	19	600	10,405
Rich ( $n = 84$ )	Nothing	2		2		1		5		1,910
	Warning		1					1		180
	Seizure of products									
	Fine (Rs. in total)	1 (80)	4 (1,600)					5	1,680	3,050
Sub total		3	5	2		1		11	1,680	5,140
Grand Total		36	23	6	2	1	7	76	4,670	42,125

<sup>a</sup> Fined perpetrators were recorded by the CFUG; responses to the survey matched these records<sup>b</sup> Estimated values of illegally extracted products were based on quantities reported and unit price provided by respondents

crimes in community forests, that often involve products used for subsistence, are dealt with locally and often mildly. The absence of illegal logging in community forests can probably be explained by a combination of improved monitoring and the relatively low value of the available timber. With community forestry, the monitoring by authorities at the only road connecting the district with potential markets is supplemented with a finely meshed monitoring network consisting of local forest watchers and a large number of CFUG members using the forest on a daily basis that have an interest to see forest values remain in the local area. A consequence of this local monitoring is the increased attention paid to illicit extraction of forest products used for subsistence. When forest management was the responsibility of authorities it would have been impossible for these to dedicate resources to monitor subsistence level forest extraction, and with little impact on national revenues it was probably never a priority either. The introduction of local forest law enforcement has thereby, in a sense, contributed to making local differences more explicit. With the new forest management responsibilities and rights the livelihood strategies of people not possessing private tree resources became subject to regulation; acts that were hitherto considered the norm became crimes, with consequences primarily for the poor in local communities.

### Forest Law Enforcement and Economic Equity

Prior to the introduction of community forestry unlicensed extraction of any product from national forests in Nepal was illegal. Other studies in developing countries have found, however, that with typical frequencies of patrols and sizes of fines it is often economically rational for forest dependent people to break such rules (Abbott and Maze 1999). Deviations between originally registered and finally assigned values to illicitly extracted products documented by this study contribute to an impression of irregularities and removal of rent-seeking options by decentralizing monitoring responsibilities to local CFUGs is likely to have had a positive, but difficult to quantify, impact on local livelihoods.

Many rules are in force in the case CFUGS included in this study, but in line with the general perception among stakeholder groups these rules are lightly enforced. Of the 76 crimes reported by the respondent households only 17 were punished with a fine, and the fine on average constituted only 60% of the estimated value of the product. In total the poor were fined with 9% of the total value of the extracted products while for the rich the figure was 33%. This study does not, then, support the hypothesis that poor households are further economically marginalised when forest law enforcement is decentralized. But local forest law enforcement may reduce poor households' forest income in ways not investigated by this study. It may be the case that especially poor households, from fear of social consequences or financial sanctions, collect less forest products than they would otherwise have done; such an outcome would become more pronounced with time as the local forest law enforcement becomes increasingly institutionalised. This is an area that warrants further investigation.

## Forest Law Enforcement and Social Equity

This study has documented widespread agreement among the stakeholder groups surveyed that the most frequently occurring crime in community forests is firewood collection, firewood being a low value product used for subsistence rather than cash generation. It is therefore not surprising that most stakeholders also agree that it is primarily the poor who commit this crime, whereas illegal logging is ascribed to the richer CFUG members who are able to invest resources in illegal timber extraction. It is commonly agreed across the stakeholder groups that most crimes are committed due to poverty or unjust rules and the reported light consequences for apprehended criminals may therefore be the results of compassion or that cultural closeness of local authorities or watchmen with forest criminals may result in a desire to maintain the social order and avoid conflict (Pendleton 1997). This does not explain, however, why the large number of non-implemented rules regulating forest product extraction are maintained, especially not when rules are perceived to not prevent forest crimes and when no clear link with the state of the resource is apparent. As the rules disproportionately relate to activities undertaken by the poor they appear to have a socially inequitable impact. This may be manifested as reduced forest product consumption by the poor and denigration of the poor.

Two explanations for the maintenance of forest rules that are not enforced are proposed. The first is the influence of outsiders: forest officers are deeply involved in writing CFUG work plans and they may, despite the people-orientated nature of community forestry, be inclined to promote the spirit of scientific forest management with the application of conservation measures to control the human impact on the natural vegetation (as reported by Klooster 2000; Larsen and Smith 2004; Cerutti and Tacconi 2008). CFUG members may then, after forest authorities' approval of the work plan, decide to apply non-enforcement of rules. The second explanation is based on recent studies finding domination of Nepalese CFUGs by local elites (e.g. Agarwal 2009; Lachapelle et al. 2004; Malla et al. 2003; Nightingale 2002) despite increasing national efforts in Nepal to combat social discrimination (Pradhan and Shrestha 2005). It may be that restrictions on forest product extraction are maintained in order to provide more well-off CFUG members with opportunities for demonstrating benevolence and thereby perpetuating patronage relations (as observed by Cameron 1998). This interpretation is partly supported by the dominant perception among all stakeholders that poor forest users have little influence on formulation of rules. The rationale behind local forest law enforcement and non-enforcement found in this study is likely to include elements from both the suggested explanations. This interpretation is, however, difficult to verify because the two proposed explanations involve currently socially illegitimate positions.

Assuming that both of the two proposed explanations contribute towards an understanding of the maintenance of unenforced forest rules by CFUGs, two sets of policy implications arise. Firstly, to counter CFUGs' perceived needs for strategic behaviour during formulation of the forest management plan it will be important to strengthen the bargaining position of CFUGs in relation to their District Forest Office and to increase the understanding among district forest personnel concerning

the need to base forest management plans on CFUGs' priorities (if such an understanding is lacking, which the present study has not documented). Secondly, to combat social discrimination the bargaining position of marginalised groups within the CFUG needs to be strengthened. Change in this regard cannot be expected to any large degree from below. Based on findings that descriptive representation (the required number of representatives from marginalised groups in committees) has the potential to increase substantial participation (influencing decisions made) (Agarwal 2010), the present rules on committee composition and priorities may need revision to even more strongly demand inclusion of marginalised groups.

## Conclusion

Local law enforcement clearly detects far more forest crimes than enforcement by forest authorities. Illegal extraction primarily of firewood but also a host of other subsistence and commercial products is more readily discovered through local monitoring. There is general agreement among stakeholders involved in Nepalese community forestry that commonly forest crimes are committed because of poverty or injustice. Due to lenient sanctioning the poor are apparently not disproportionately affected by the local forest law enforcement in economic terms, although they may be abstaining from forest product extraction.

The poor arguably face negative social effects of the local forest law enforcement because they are excluded from influencing the formulation of rules and they face subtly denigrating consequences of crimes, even when no fines are levied. Explanations for maintaining rules that are not enforced may include the influence of national forestry priorities and an attempt by the rural elite to maintain patronage relations. Consequently, present local law enforcement in the studied Nepalese community forests, though not economically harmful to the poor, may serve to perpetuate existing social inequities.

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